BACKGROUND OF THE INVENTION

(0001) In the construction industry it is desirable to effectively manage construction projects. In construction a general or prime contractor, herein after general contractor, must manage a variety of ongoing projects. Overlapping the projects is the need to manage relationships with many individuals including project owners, architects, sub-contractors, material suppliers and inspectors.

(0002) One of the critical functions in a construction project is to manage the submittal of information and materials to meet specifications. In almost all construction projects it is typical for the architect and engineering design firms to determine a project design and to set the specifications for materials to meet the design parameters. Once the specifications are set, contractors and subcontractors working on the project must make submittals of material specifications to meet the requirements set. A big job for those involved with a construction project is to manage these submittals and to receive timely approvals to requests to keep a construction project moving forward.

(0003) In today's construction environment large fines and penalties can be exacted against entities that fail to act in a timely and efficient manner. These fines can lead to litigation associated with when submittals were made and who is responsible for delays. In many cases stacks of files and paperwork must be stored for years by each entity involved with a project to create a paperwork trail of what happened when. With fines and the threat of litigation, documentation has become a critical element for the contractor who plans to succeed in managing construction projects.

(0004) US Patent 6,038,547 shows construction management software designed to assist in tracking job completion and payments to subcontractors for percentage of work completion. Use of this software by a general contractor would solve some problems associated with project management. This software does not offer assistance to the contractor or others in tracking the process of creating tracking and storing submittals and submittal information.

(0005) Patent 6,092,050 offers a software to develop bids and to manage the scheduling of projects. Again this software does not propose to manage submittals and does not provide a networked solution to project management.

(0006) Patent 6,446,053 provides a networked system of developing and submitting a bid proposal for a construction project. This system primarily allows the user to develop a project on line and to store it so that contractors can access and bid on the job. The system does not allow the user to create, manage or store submittals concerning material specifications of the project.

(0007) Patent 6,393,410 provides a networked construction management system. The system stores shop drawings and project specifications on line in such a way that professionals in the construction industry can purchase project plans on-line and can submit proposals on the projects. Again the system does not allow for creation, management or storage of submittals made in the process of completing a construction project.

(0008) As can be seen there is a need for a networked system that allows the range of construction professionals to be involved in the creation of submittals, the

management of those submittals and the storage of submittal information for future use or sale.

(0009) SUMMARY OF THE INVENTION

(0010) The present invention relates to a networked system that brings together the various professionals and suppliers that might be involved in creating, managing and storing the plurality of material specification submittals associated with a construction project. The system provides for network access to the system for those professionals that might need it. The system provides for variable access depending upon the need an individual might have in a project.

(0011) In another aspect of the system it allows for sub-contractors to make submittals over the Internet. Those submittals can be submitted on-line to an architect for approval, denial or for comment. The system can enable users to order materials and work automatically through the system upon approval being received and the system can automatically authorize payments to all parties upon approval of a submittal being received.

(0012) In still another aspect of the invention a submittal history is stored. That submittal history is then available to anyone who has access to it during the project and for a time after the project is completed.

(0013) These and other advantages of the present invention will become apparent from the detailed description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a portion of a flow chart of the submittal management system;

Figure 2 shows the remaining portion of the flow chart from Figure 1 and;

Figure 3 shows a flow chart of how the system is managed.

(0014) DETAILED DESCRIPTION OF THE DEVICE

(0015) Figure 1 shows a flow chart of the system 10 for submittal process management, the flow chart of Figure 1 tracks a single submittal requirement through the system 10. The system 10 begins after an architect has developed a project plan, and a general contractor has bid on and received the contract to build a project. The initial step in the submittal process can be for the architect to send the general contractor the submittal log 100. The submittal log contains all the requirements and specifications that must be met by various components used in a construction project. For a multi-story building the submittal log will contain thousands of requirements for the total building. The submittal log along with project prints, specifications and other contract documents can be transferred electronically to the general contractor who can make those documents available to project professionals selectively through an Internet site.

(0016) After the general contractor receives the submittal log, the requirements will be divided up 102 and stored in a network accessible database. The requirements are generally divided along the lines of trades such as plumbing, structural, electrical, heating and ventilating and so forth. The project is then posted 104 to a computer network such as the Internet so that the subcontractors of the various trades can begin to download the submittal requirements for their portion of the project. Each person involved in the project will be emailed a password 106 that will give them selective access to the system 10. In addition to the general and

sub contractors (subs) the architect, project owner and others can have selective access. Once a project is posted the subs will receive 108 an email, automatically sent by the system 10, alerting them to the availability of project information. It is important at this stage that the various trades have the ability to move forward on the project quickly.

(0017) The subcontractor will then evaluate 112 the need for additional information in order to make a submittal. If no outside assistance is need, the sub can use the system 10 to go ahead and generate 114 a submittal based on the requirements of their portion of the project. If however additional information is need, which is often the case, then the sub can go to a variety of specification web sites 120. For example, the sub might use the system 10 post a requirement with a supplier that has access to the system 10. That supplier web site 120 could send the sub information by which the sub could generate the submittal 114, or the system 10 could even post the submittal 114 for the sub. If the supplier is to send info for a submittal to a sub, the system 10 can check 122 that the specifications meet the submittal requirement posted. If in fact the specification check 122 of the supplier's product and the submittal match then the submittal information can be forwarded electronically either to the sub to generate the submittal or the submittal can be sent directly by the supplier for the sub. In situations where a physical sample must be sent 121, such as carpet or paint swatches, the supplier can send these directly to the general contractor, sub, architect and owner as desired. An email can be sent automatically alerting those in the system 10 that physical samples are coming.

(0018) Figure 2 shows a continuation of the system 10 flowchart from Figure 1. The subcontractor will conduct a review of the completed submittal 130, and make any changes required. Then the completed submittal can be stored and posted 140 to an Internet web site. Once a submittal is posted 140 it can be reviewed in review process 150 by various professionals involved in the project including typically the architect, general contractor and project owner. During the review process 150 suggestions can be posted to submittal database 600 (Figure 3) on the web site. For example, the owner might post a question for clarification. After review 150 the next step can be for the submittal to receive approval 162, typically from the project architect or engineer. If not approved then the subcontractor could need to revise the submittal based on comments posted to the electronic web site database. Electronic notice 160 of a submittal acceptance or rejection can be sent via the system 10. Once a submittal is approved, it is submitted to the system 10 and updated as complete 164 in the system 10 and posted as approved on the web site 170 and continues to be available on a selected basis until after the completion of the project. When a project is approved 162, the system 10 can be set to automatically order materials approved, for example an order 180 for carpet that has been approved, could automatically be sent to a supplier. The approval can also automatically approve payment 190 to a subcontractor for materials and work to be done. Once a construction project is complete the submittal archive could be stored and be available for future use on a fee basis. For example if a question arises 2 years after a project is completed then a contractor may still be able to download submittal information for a fee.

(0019) Figure 3 provides a view of the system 10 from the perspective of management of the system 10. To begin the system operation process, a general contractor will signup 500 on the system 10. A fee might be collected from the subscriber 510 at this point via electronic means or the contractor might pay a one time subscription fee and have access to the system 10 for a period of time. The general contractor is then considered by the system to be a subscriber and will then be directed to welcome pages 502, the contractor can at this point enter a project (job) and can enter and store information about the various project users who will have selective access to the project information. New users 504 and those 506 directed to the system 10 by emails will also go through a welcome process that may include instructions for using the system, a password requirement and a fee process.

(0020) In the example shown four system user access points are identified a subscriber 510, a contributor 512, a responder 514 and a guest 516 access points. The subscriber 510 access point sets the various levels of access that users would have based on these four choices. In a typical project there might actually be a dozen or more system user access points on a given project but these four access points 510, 512, 514, and 516 show the range of different system and project access that is being contemplated. An access point would typically be a computer having access to a network containing the system 10. In the typical project the subscriber 510 access point would be the general contractor in charge of the entire project. The contributor 512 access point would typically be individuals contributing submittals in completion of project requirements and would normally

be trades subcontractors. The responder 514 access point might be a project engineer or architect and the guest 516 access point would typically be a representative of the project owner.

(0021) The subscriber 510 has access to enter and store online available information about himself in a my info 520 database. The my info 520 database might include information about the subscriber such as contact information, role in a project or about past projects and credentials. The my info 520 database can be posted in several different jobs so that a single posting will keep several jobs updated. The my info 520 database is a common process that all users will be able to fill out and store on themselves. Thus there may be my info 520 data for the architect, general contractor, subcontractors, owners, suppliers and regulators on a project.

(0022) The subscriber 510 has access to manage jobs database 530 and as mentioned a subscriber 510 may have many jobs at various states of completion and ultimately may have an archive of completed jobs as well. So a subscriber 510 can choose to manage jobs and this choice will allow the subscriber 510 to post information about a job that will become available to some or all users. The subscriber 510 can enter people into a job database and by doing so give them access to the job information. The subscriber 510 can enter specifications that apply to the certain job so that users can access information on submittal requirements and so that requirements can be received 108 by subcontractors. This database can contain information such as job drawings. The subscriber 510 can choose to automatically send an email to some or all users concerning changes made in job

data. The manage jobs database 530 function also allows the subscriber 510 to add additional jobs to the system 10.

(0023) The subscriber 510 has the ability to manage users 540. This function allows the subscriber 510 to track submittals from any user. This function also allows the subscriber 510 to edit information about a user and to enter notes about the user. Notes could be automatically tabulated such as a report on how many jobs a subcontractor has, how many days behind or ahead the contractor is as well as notes on the number of submittals a subcontractor needs to submit on one or all jobs and how many submittals the subcontractor may have that are overdue. This function can automatically contact the subcontractor on the information above such as automatic notification if a submittal is past due.

(0024) The manage teams 560 function is similar to the manage user function 540 but allows the subscriber 510 to put together teams that may be on the same job or that may have a common concern outside any given job. An example would be a group of plumbing contractors concerned about a new city ordinance that wish to form a discussion group and post messages automatically distributed to all members of the team. Like the manage users function 540, this manage teams function 560 can automatically notify all members of a team that a submittal is past due.

(0025) The manage specification 580 function is where the original requirements for a job are posted to the system 10. This function provides the subscriber 510 with a number of prearranged trade areas into which specifications may be categorized.

For example, all electrical requirements would be placed into one category and ultimately these would be available automatically to the subcontractors that would need this information, and automatically sent email can make them aware that the information is available. Requirements can be loaded into each job from a list of standard requirements for a type of job where such a list exists. For example, a particular job may require doors of a certain fire rating and specs to meet these requirements could be pulled automatically from this function by entering the job name or job number.

(0026) Manage items database 600 is the management and completion of the actual submittals occurs. In this function the subscriber 510 can review actual submittals and make comments on submittals sent or create submittals where needed. Figures 1 and 2 show the management of an actual submittal document that occurs within this manage items database 600.

(0027) The contributor 512 has some of the same capability as the subscriber 510. The contributor 512 has the same my information capability 520. The contributor 512 has limited ability to manage jobs 532 in a portion of the manage jobs database 530, manage specs 582 in a portion of the manage specs database 580 and to manage items 602 in a portion of the manage items database 600. The contributor 512 has no ability to manage users or teams in this embodiment. This has the effect of forcing all correspondence and project information through the subscriber 510 and system 10 so that the subscriber 510 (general contractor) is aware of all aspects of the project process and so that a full record of all project activity is made. An alternative would be to give the contributor some limited

ability to manage some users and teams related to their aspect of the overall project. The contributor 512 may need to pay to do this.

(0028) The contributors 512 limited ability to manage jobs is essentially the same as that for the subscriber 510 except that the contributor 512 can not add new jobs. The contributor can also manage specs 582. In this function the contributor can add specifications that he is aware of. The contributor 512 can also manage items 602 and this would be where the contributor would actually create and submit a submittal document.

(0029) The responder 514 is typically a project engineer or architect and mainly needs access to the system 10 to approve or to disapprove of a submittal. As such the responder 514 can enter my information 520 and can access manage job and manage spec information to get information to allow them to approve or disapprove or make remarks on a submittal under manage items 604. The guest 516 is a read only and as such can not enter any information or manage any project information.